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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,824	05/15/2006	Christophe Colignon	PSA0313828	7288

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EXAMINER	
NGUYEN, TU MINH	
ART UNIT	PAPER NUMBER
3748	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,824	COLIGNON, CHRISTOPHE	
	Examiner	Art Unit	
	TU M. NGUYEN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's Amendments filed on December 24, 2008 has been entered. Claims 1, 8, and 9 have been amended. Overall, claims 1-16 are pending in this application.

Drawings

2. The formal drawings filed on May 15, 2006 have been approved for entry.

Claim Objections

3. Claim 1 is objected to because of the following informalities:

- Line 4 of the claim, "catalyst" should read --catalyst-forming means--; and "device" should read --means--.

- Line 13 of the claim, "catalyst" should read --catalyst-forming means--.

- Line 15 of the claim, "device" should read --means--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 7-10, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. (U.S. Patent Application 2003/0046929) in view of Itoh et al. (U.S. Patent 6,769,245).

Re claims 1 and 9, as illustrated in Figures 1-2, Terada et al. disclose a system and a method for assisting the regeneration of depollution means (44) associated with oxidation catalyst-forming means (43) and integrated in an exhaust line (40) of a motor vehicle diesel engine (11), in which the oxidation catalyst-forming means (43) is located upstream of the depollution means (44) in the exhaust line and the engine is associated with common rail means (not shown but obviously must have in order to feed fuel to each fuel injector (22)) for feeding its cylinders with fuel, the system comprising means (53, 54, 55) for analyzing the running conditions (exhaust gas temperature, engine speed, value of injection fuel quantity) of the vehicle and for comparing (exhaust gas temperature is compared with a threshold value in paragraph 0036) them with predetermined threshold values, to control the engine in a first regeneration mode of operation with a lean mixture when running conditions are above the threshold values (when an exhaust gas temperature is higher than 200°C, the engine is in the Continuous Regeneration Mode, a normal lean operating condition of the engine is maintained to regenerate the particle filter (44) (see paragraphs 0035-0036)), or in a second regeneration operating mode implementing sequences in which engine operation alternates between stages of rich mixture operation and of lean mixture operation when conditions are below the threshold values, so that during a rich mode, a reducing agent is oxidized at the oxidation catalyst-forming means to raise temperature levels at an inlet to the depollution means (from paragraph 0038, when a quantity of particulate matter in the filter exceeds a critical value, a compulsive regeneration mode of the

filter is initiated, wherein if an exhaust gas temperature at the oxidation catalyst-forming means is higher an active temperature of the catalyst (step S3 with YES answer), a post-injection fuel is performed so that the fuel is oxidized at the oxidation catalyst-forming means to further raise the exhaust gas temperature at an inlet to the depollution means (44)).

Terada et al., however, fail to specifically disclose that the oxidation catalyst-forming means (11) implements an OSC function that constitutes a supply of oxygen.

As shown in Figure 1, Itoh et al. disclose an exhaust gas apparatus of a diesel internal combustion engine, comprising a particle filter (22) carrying an oxidation catalyst. As depicted in Figures 4A and 7B and indicated on lines 58-65 of column 6 and lines 51-60 of column 12, Itoh et al. teach that it is conventional in the art to utilize an oxidation catalyst (platinum) having the active oxygen release agent (potassium) in conjunction with the particulate filter, wherein the active oxygen release agent has a function to store oxygen ions on its surface and the oxidation catalyst is adapted to oxidize NO in an exhaust gas with the released oxygen ions from the active oxygen release agent to produce NO_2 which is used to promote combustion of the soot trapped by the particulate filter. Furthermore, as indicated in the Abstract, when an air-fuel ratio of the exhaust gas stream is switched to rich, an oxidation of the particulate matter in the filter is promoted by the released oxygen ions from the active release agent. Since Terada et al. also utilize an oxidation catalyst-forming means that has the exact functions as those by the oxidation catalyst in Itoh et al., it is at least obvious to one having ordinary skill in the art at the time of the invention was made, to realize that the oxidation catalyst-forming means in Terada et al. implements an OSC function that constitutes a supply of oxygen.

Re claims 2 and 10, in the system and method of Terada et al., the depollution means comprise a particle filter (44).

Re claims 7 and 15, in the system and method of Terada et al., the engine is associated with a turbocharger (41).

Re claims 8 and 16, in the system and method of Terada et al., the running conditions are determined from at least one of the load (injection fuel quantity) on the engine and its running speed (engine revolution or speed).

6. Claims 3; 4, 6; 11; and 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. in view of Itoh et al. as applied to claims 2; 1; 10; and 9, respectively, above, and further in view of Asanuma et al. (U.S. Patent Application 2002/0007629).

Re claims 4 and 12, the system and method of Terada et al. disclose the invention as cited above, however, fail to disclose that the depollution means comprise a NOx trap.

As shown in Figure 18, Asanuma et al. disclose a device for purifying an exhaust gas of a diesel internal combustion engine, comprising a particle filter (70). As depicted in Figure 22 and indicated in paragraphs 0091-0092, Asanuma et al. teach that it is conventional in the art to include a NOx trap and a noble metal catalyst on both sides of a partition wall (54) in the particle filter so that the filter is adapted to remove and purify harmful NOx emissions in the exhaust gas. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the particle filter taught by Asanuma et al. in the system and method of Terada et al., since the use thereof would have been routinely practiced by those with ordinary

skill in the art to remove and purify harmful NOx and particulate matter emissions in an exhaust gas stream.

Re claims 3, 6, 11, and 14, in the modified system and method of Terada et al., the depollution means are impregnated with an SCR formulation (NOx absorbent and noble metal catalyst), performing a function of oxidizing CO/HC.

7. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. in view of Itoh et al. as applied to claims 1 and 9, respectively, above, and further in view of Rao (U.S. Patent 4,655,037).

The system and method of Terada et al. disclose the invention as cited above, however, fail to disclose that the fuel includes an additive that is to be deposited together with the particles with which it is mixed on the depollution means in order to facilitate regeneration thereof.

Rao discloses a carbon ignition temperature depressing agent and a method of regenerating a particle filter utilizing the agent. As indicated on lines 30-42 of column 3 and line 58 of column 3 to line 14 of column 4, Rao teaches that it is conventional in the art to include an additive (metal oxide) in an engine fuel so that the additive is deposited together with the particles with which the addictive is mixed on a particle filter in order to facilitate regeneration thereof by reducing an ignition temperature of the particles. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the additive taught by Rao in the system and method of Terada et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to save fuel or electricity by reducing an ignition temperature of the particles.

Response to Arguments

8. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tu M. Nguyen/

TMN

Tu M. Nguyen

April 24, 2009

Primary Examiner

Art Unit 3748